STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

REPORT OF EXAMINATION

TO APPROPRIATE PUBLIC WATERS OF THE STATE OF WASHINGTON

☐ **Surface Water** (Issued in accordance with the provisions of Chapter 117, Laws of Washington for 1917, and amendments thereto, and the rules and regulations of the Department of Ecology.)

☒ **Ground Water** (Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and amendments thereto, and the rules and regulations of the Department of Ecology.)

PRIORITY DATE	APPLICATION NUMBER	PERMIT NUMBER	CERTIFICATE NUMBER
September 25, 1990	G2-27869		

NAME
Saint Martins Abbey

ADDRESS (STREET)	(CITY)	(STATE)	(ZIP CODE)
ST. Martins Abbey 700 College St.	Lacey	Washington	98503-1292

PUBLIC WATERS TO BE APPROPRIATED

SOURCE
Well #3

TRIBUTARY OF (IF SURFACE WATERS)

MAXIMUM CUBIC FEET PER SECOND	MAXIMUM GALLONS PER MINUTE	MAXIMUM ACRE-FEET PER YEAR
	50	*200 (supplemental)

QUANTITY, TYPE OF USE, PERIOD OF USE		
*200 acre-feet per year *Supplemental	Irrigation 100 acres	May 1 to October 1

LOCATION OF DIVERSION/WITHDRAWAL

APPROXIMATE LOCATION OF DIVERSION–WITHDRAWAL
950 feet north and 320 feet west of the south quarter corner of Section 16.

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION)	SECTION	TOWNSHIP N.	RANGE, (E. OR W.) W.M.	W.R.I.A.	COUNTY
SE¼ SW¼	16	18	1W	13	Thurston

RECORDED PLATTED PROPERTY

LOT	BLOCK	OF (GIVE NAME OF PLAT OR ADDITION)

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

Service area of Saint Martins Abbey and College.

DESCRIPTION OF PROPOSED WORKS

A 12" by 210' drilled well. To be equipped with a pump capable of discharging 50 gpm to existing 4" and 2" mainline for irrigation.

DEVELOPMENT SCHEDULE

BEGIN PROJECT BY THIS DATE:	COMPLETE PROJECT BY THIS DATE:	WATER PUT TO FULL USE BY THIS DATE:
Started	April 1, 1994	April 1, 1995

REPORT

BACKGROUND:

On September 25 1990, St. Martin's Abbey filed for a permit under the provisions of Chapters 90.03 and 90.44, Revised Code of Washington to appropriate public ground water from a well in the amount of 750 gallons per minute for community domestic supply and irrigation. This application was assigned Application No. G2-27869, and given a priority date of September 25, 1990.

Legal notice appeared in The Olympian of Olympia, Washington on October 8 and 15, 1990. No objections were received.

INVESTIGATIONS:

In consideration of this application, I conducted a field investigation on December 10, 1991. Representatives of St. Martins were not present during the site visit. Kathleen Bauknight of St. Martins was contacted for additional information.

Other investigations included a review of water well reports, recorded water rights, water rights claims, Pacific Groundwater Group Hydrogeologic Report (August 1991), Robinson & Noble, Inc. Report (November 1990), Chapter 173-513 WAC - Instream Resources Protection Program -- Deschutes River Basin, telephone interviews, and an office meeting with St. Martins Representative Kathleen Bauknight for system details.

As a result of these investigations, the following is reported.

Location and Site Description

The site for this well, known as Well No. 3, is located adjacent to the College near the SE property corner. Well No. 1 (G2-27786) drilled for this same project is located approximately 50 feet north. Well No. 3 was constructed in April 1991 by Hokkaido Drilling & Development Corp.

Well No. 3 is 12 inches in diameter and completed at a depth of 210 feet. The static water level was measured at 53 feet below land surface on May 13, 1991. Static water levels were not taken during my field investigation as the well was completed with a welded cap as directed by this office.

System Description

Well Depth:	210 feet
Casing Diameter:	12 inches
Site Elevation:	180 above MSL
Static Water Level:	53 below ground level
Yield:	50 gpm
Storage:	60,000 gallon

Aquifer Characteristics

Well Nos. 1 and 3 are completed in a water-bearing formation consisting of coarse sand and gravel. Overlying layers are composed of sand, gravel and clay layers.

Well log and water right research for this area indicate that shallow wells and springs are present. These nearby shallow wells and springs suggest a shallow water-table aquifer is present beneath the site, which may sustain the baseflow of Woodland Creek.

Effect On Existing Rights

The following ground water records are on file with the Department of Ecology within a half mile radius of the subject project site for St. Martin's wells:

- Twelve recorded ground water rights have been issued. The combined instantaneous withdrawal authorized under these rights is 6,075 gpm, with an annual allotment of 5,632.7 acre-feet per year. Five of these rights are municipal supply for the City of Lacey.

- Eleven wells have been constructed. These wells range in depth from 22 to 479 feet. Four of these wells penetrate the shallowest aquifer from 0 to 118 feet. Four others use water from 118 to 150 feet. Two wells penetrate the deeper aquifer from 339 to 479 feet. One other well, completed at 195 feet uses water from the same aquifer penetrated by the applicant's well.

- The claim register shows 16 ground water right claims were filed that may be within the same half mile area.

Under Chapter 173-513 WAC, Instream Resources Protection Program for the Deschutes River Basin, Water Resource Inventory Area (WRIA) 13, Woodland Creek and all tributaries are closed to further consumptive appropriations all year.

Given the closure, the Abbey has reassessed water development plans and will only irrigate up to 100 acres currently authorized under their existing rights from the springs. The total instantaneous withdrawal under this request and Ground Water Application No. G2-27786 will not exceed the instantaneous diversion authorized under said springs.

The applicant understands and agrees that the spring rights and the wells referenced above shall not be used at the same time, therefore no impact will occur within the surface water system of Woodland Creek.

St. Martins Existing Rights

Surface Water Certificate No. 9979, authorizes the diversion of .48 cfs from unnamed springs tributary to Woodland Creek, for multiple domestic supply and irrigation of 100 acres. The priority date of this right is May 16, 1949.

The water system for irrigation from the unnamed springs consists of a large concrete collection box. Water is then conveyed through an eight inch steel pipe to ~~a 60,000 gallon water storage tower located on campus~~. Existing four and two inch mainline are used to convey water to areas surrounding the campus buildings for lawn and garden watering. Per telecom with Kathleen Baukhight on 5/13/93 (VW)

St. Martin's Surface Water Certificate No. 9979, is not in use at the present time but the water system is usable and will be maintained for a back up source for irrigation. Irrigation uses will consist of pasture, lawns and gardens.

Water Requirements

Water requirements for irrigation in Western Washington is 2 acre-feet per acre. For 100 acres, this amounts to 200 acre-feet per year, supplemental to existing Surface Water Certificate No. 9979. The normal irrigation season in Western Washington is May 1 to October 1. The total annual quantity issued under ground water applications G2-27786, G2-27869, and Surface Water Certificate No. 9979 shall not exceed 200 acre-feet per year.

CONCLUSIONS:

In accordance with Chapters 90.03 and 90.44 RCW, I find there is water available for appropriation from the source in question, that the appropriation as recommended is a beneficial use, and should not impair existing rights or be detrimental to public welfare.

Well No. 3 is approximately one half mile west of Woodland Creek, which flows northerly through St. Martin's property. Well No. 3 is about 180 feet above sea level, while Woodland Creek's elevation is about 140 feet above sea level. This 40 foot elevation difference from the well site to the creek, places the completed well approximately 170 feet below the creek bed. The screen assembly was installed from 175 feet to 190 feet below ground surface.

Hydrogeology Review and Comments

The two reports reviewed for this project did not cover the potential of hydraulic continuity with Woodland creek. However, Chuck Lehotsky of Ecology's SWRO hydrogeology unit has reviewed this project to try to determine impacts to nearby Woodland creek. His review is summarized below:

During the pumping tests conducted by both consultants for this project, drawdown decreased significantly after about 10-30 minutes of pumping. Pacific Ground Water Group suggested that this decrease in the rate of drawdown could be attributed to either 1) leakage (recharge) from underlying low-permeability silty sand and clay, or 2) the pumping well is eventually intercepting a more transmissive portion of the aquifer at some distance.

If this decrease in the rate of drawdown is a result of leakage (recharge), then this leakage could be occurring from confining layers and water bearing zones both above and below the aquifer tapped by the St. Martin's wells.

If Woodland Creek baseflows are sustained by groundwater from a shallow water-table aquifer, and if pumping from the St. Martin's wells induces leakage from upper confining layers and water-bearing zones (including the water-table aquifer), then it is possible that pumping from these wells could affect (reduce) Woodland Creek baseflows.

On August 20, 1992 this office sent a letter to St. Martin's, regarding the potential impact to Woodland Creek from pumping the proposed wells in excess of St. Martin's existing water rights. Three options were offered for consideration:

- Further testing and study to demonstrate that Woodland Creek would not be impacted by the proposed ground water withdrawals.
- Irrigate only 100 acres as authorized under the existing surface water right, utilizing either the spring or groundwater source, but not both at the same time. Annual quantities authorized from the wells would be supplemental to existing rights.
- Propose suitable conservation/mitigation measures to compensate for the additional withdrawal of water requested.

Discussion

A constant rate pumping test was conducted using a submersible pump capable of 70 gpm. The static water level at the time of testing was measured at 53 feet. The water level at the end of the test was 155 feet for a total drawdown of 102 feet. The specific capacity of the well is 0.7 gpm per foot of drawdown.

Aquifer transmissivity was calculated at 250 gpd/ft. Pacific Groundwater Group recommends Well No. 3 be rated for 50 gpm.

Reduction Of Requested Withdrawal and Uses

Accordingly the requested withdrawal of 750 gpm from Well No. 3 is hereby reduced to 50 gpm to reflect the actual capacity. This reduction was confirmed during my March 18, 1992 meeting at St. Martin's College with Kathleen Bauknight.

Kathleen Bauknight has stated that Well No. 1 and Well No. 3 will be used only for irrigation of 100 acres. As referenced below, 100 acres is covered under existing surface water certificate no. 9979.

The City of Lacey currently serves and will continue to serve domestic water supply to the college. Therefore the request for community domestic supply is hereby dropped from this Application G2-27869 and Application No. G2-27786.

Report Continued

RECOMMENDATIONS:

I recommend approval of this application and issuance of a permit to allow appropriation of 50 gallons per minute from Well No. 3 for irrigation. The period of use shall be May 1 to October 1. The total annual withdrawal shall not exceed 200 acre feet per year, supplemental to existing surface water certificate no. 9979.

Approval shall be subject to the following provisions.

"Water use shall be limited to either ground water withdrawals authorized under G2-27786 and G2-27869 or from springs described under surface water certificate no. 9979, but not both at the same time."

Installation and maintenance of an access port as described in WAC 173-160-355 is required. An air line and gauge may be installed in addition to the access port.

An approved metering device shall be installed and maintained in accordance with RCW 90.03.360, WAC 508-64-020 through -040 (installation, operation, and maintenance requirements are attached). Meter readings shall be recorded at least monthly.

A certificate of water right will not be issued until a final investigation is made.

The Water Resources Act of 1971 specifies certain criteria regarding utilization and management of the waters of the State in the best public interest. Favorable consideration of this application has been based on sufficient waters available, at least during portions of the year. However, it is pointed out to the applicant that this use of water may be subject to regulation at certain times, based on the necessity to maintain water quantities sufficient for preservation of the natural environment.

This authorization to use public waters of the state is classified as Family Farm Permit in accordance with Chapter 90.66 RCW. This means the land being irrigated under this authorization shall comply with the following definition: Family Farm - a geographic area including not more than 2,000 acres of irrigated agricultural lands, whether contiguous or noncontiguous, the controlling interest in which is held by a person having a controlling interest in no more than 2,000 acres of irrigated agricultural lands in the State of Washington which are irrigated under water rights acquired after December 8, 1977. Furthermore, the land being irrigated under this authorization must continue to conform to the definition of a family farm.

The applicant is advised that notice of proof of appropriation of water (under which the final certificate of water right is issued) should not be filed until the permanent diversion facilities have been installed, and the system is currently in use. This includes installation of a mainline system capable of delivering the recommended quantity of water to an existing or proposed distribution system within the area to be served, and fulfillment of all other terms of this permit.

Water levels shall be measured and recorded using a consistent methodology, in accordance with accepted industry standards. Such measurements shall be made at least monthly. The length of the pumping period or recovery period prior to each measurement shall be constant, and shall be included in the record.

Under RCW 90.44.250 and 90.54.030, the Department of Ecology is directed to become informed about all aspects of the water resources of the State. The Department is authorized to make such investigations as may be necessary to determine the location, extent, depth, volume, and flow of all ground waters within the State. Accordingly, the applicant shall monitor and provide an annual summary of the previous year's monthly water level data and monthly totals of water pumped for this well. The summary shall be submitted in tabular format to Ecology's Southwest Regional Office annually, during the month of February, or more frequently if requested by the Department.

REPORTED BY: Vicki Winslow Date: April 12, 1993

The statutory permit fee for this application is $40.00.